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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/679,714	AWAD, AZIZ CHAFIC	
	Examiner	Art Unit	
	VIREN THAKUR	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,6-14 and 16-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,6-14 and 16-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-2, 4, 6-14, 16-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 20, 28 and 29 recite the limitation "at least one of a food grade acid or an alkali metal hydroxide." This reads on employing more than one of a food grade acid or an alkali metal hydroxide. Applicant does not have support for this limitation in the specification. Page 2, lines 1-2 of the specification recite "comprising alkali metal hydroxide or food grade acid." This does not read on employing more than one of either of these types of materials.

It is further noted that claims 1 and 20 recite the limitation with regard to washing, "by introducing water to remove residues on the uncooked processed food from the fermentation through the outlet strainer." Applicant does not have support for this limitation in the specification, and it is therefore seen to be New Matter. It is noted that the specification only recites washing to remove residues and does not disclose that this

washing is performed within the fermenter. Applicant discloses washing prior to cooking on pages 5-6 paragraph 0012 and discloses washing prior to fermenting on page 12, paragraph 0026. The specification does not disclose washing in the fermenter so that the washing water is removed through the outlet strainer.

Claim 1 further recites the limitation "a fluid aqueous medium." Applicant urges that paragraphs 21, 26 and figure 2 provide support for this limitation. It is noted, however, that it is not clear that 100 grams of potatoes to 500 mL of water would have resulted in a fluid aqueous medium as opposed to just an aqueous medium. Furthermore, it is noted that applicant has not defined what is considered a fluid aqueous medium and in light of this ambiguity, it is noted that applicant has not provided sufficient written description for the limitation "fluid aqueous medium."

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4 recites the limitation "wherein the aqueous medium for the fermentation is at a temperature between about 10° and 40°C and a pH between about 4 and 5." The limitation is unclear as to whether this pH occurs prior to the fermentation or during fermentation.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-2, 6-10, 12, 14 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hilton et al. (US 4140801) in view of Christ et al. (US 4242361), "Yeast Growth Medium", "Catalogue of Bacteria & Bacteriophages", Champagnat (US 3193390), Lund (Detection of Microorganisms in Food), "Yeast Media, Solutions and Stocks", Christ et al. (US 4242361), Green et al. (US 3891771), Annuk et al. (US 5316776) and Sokolsky (US 1676166) for the reasons given in the previous Office Action, mailed May 13, 2008 and in further view of Hopkins (US 4341802), Young et al. (US 3886046) and Pinnegar (US 3425839).

Regarding the new limitation of a fluid aqueous medium, it is noted that Hilton et al. teaches that the medium comprising the microorganism is an aqueous slurry (column 7, line 27) and therefore is a fluid aqueous medium. It is noted that to this medium, potatoes are added, and therefore a fermentation with an aqueous medium is performed.

Regarding the strainer, it is noted that Green et al. teaches that the recirculation of an aqueous medium requires that the vessel employ a strainer to support the food, while the aqueous medium is recirculated. Hopkins, which is newly relied on, teaches that recirculating of the aqueous medium is beneficial in the fermentation processes since the resulting liquor formed during fermentation comprises the nutrients that can be recycled back into the fermentation to support additional microorganism growth (Column 6, lines 54-68). Similarly, Young et al. teach recycling a fermentation stream for the purpose of increasing fermentation rates by recycling cells as nutrients (for microorganism fermentation) back into the fermenter (see abstract and column 2, lines 60-65 and column 2, line 66 to column 3, line 2) for essentially increasing the fermentation rate. Nevertheless, Hopkins and Young et al. thus teach that recirculating the aqueous medium back into the fermentation tank is clearly advantageous for the purpose of increasing fermentation rates. Additionally, Pinnegar teaches that it was conventional in the art of fermentation to provide a filter within the fermentation vessel, for the purpose of separation a liquid from a solid. On column 4, lines 59-62, Pinnegar also teaches recycling the fermentation liquor. In view of the art taken as a whole, to therefore recirculate the aqueous medium would have been obvious for its art

recognized and applicant's intended function. To therefore employ a strainer, as taught by Green et al., would have been obvious to one having ordinary skill in the art, for the purpose of retaining the product to be fermented in place, while the nutrient liquor is recycled to increase microorganism growth and fermentation rates.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as begin unpatentable over the references as applied to claims 1-2, 6-10, 12, 14 and 17-19, above, and in further view of Goering et al. (US 4428967).

Claim 13 differs from the combination in specifically reciting recycling the yeast between batches of the uncooked processed food. The art, as applied to claims 1-2, 6-10, 12, 14 and 17-19 already teaches that it was conventional to recycle yeast. Nevertheless, Goering et al. teach that yeast that has been recovered from a fermentation will then be recycled to the fermenters, which would have increased the yeast populations and then would shorten the fermentation time and therefore reduce fermentation volume and production costs (column 13, lines 23-34). It is noted that Goering et al. is similar to the prior art in that it teaches using fermentation microorganisms such as yeast. To therefore modify the combination and reuse yeast would have been obvious to one having ordinary skill in the art, for the purpose of reducing the fermentation time to achieve the similar fermentation rates.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims 1-2, 6-10, 12, 14 and 17-19, above, and in further

view of "Yeast Fermentation" and as further evidenced by "How To Restart a Stuck Fermentation" for the reasons given in the previous Office Action, mailed May 13, 2008.

10. Claims 4, 11, 12, 16 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims 1-2, 6-10, 13-14 and 17-19, above, and in further view of Hagiwara (US 4298620), Bechtle (US 3818109), "Fermented Fruits and Vegetables", Baldwin (US 2744017), applicant's admission of the prior art and "Lactic Acid Bacteria" for the reasons given in the previous Office Action, mailed May 13, 2008.

Claim 20 is similar to claim 1, with the difference being the particular pH of the aqueous medium being between 4 and 5. It is noted that it would have been obvious to one having ordinary skill in the art to employ this pH range, for the reasons given with respect to claim 4. Claim 21 Hilton et al. teach wherein the cooked product can be potato chips (column 5, lines 49-50) by frying (column 6, line 5). Regarding claim 22, it is noted that since Hilton et al. teaches that the uncooked processed potatoes are shaped and cut formed into potato slices, for making potato chips. It is noted that this reads on the claimed limitation of the "processed food is potato slices." Regarding claim 23, Hilton et al. teach wherein the microorganism is yeast, as discussed with respect to claim 10. Claim 24 is rejected for the reasons given with respect to claim 12. Claim 25 is rejected for the reasons given with respect to claim 16.

11. Claims 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims 1-2, 6-10, 13-14 and 17-19, above, and in further view of Amrein ("Potential of Acrylamide Formation, Sugars, and Free Asparagine in Potatoes: A comparison of Cultivars and Farming Systems").

It is noted that applicant filed provisional application 60/424,151 on November 6, 2002 and claims priority to this application. It is noted, however that the limitation of the particular amounts of the fructose and glucose, as disclosed in claims 26-31 is not supported in the provisional application. As such the effective filing date for these limitations is October 6, 2003.

Claims 26-31 are rejected for the reasons given with respect to claim 1. These claims further differ form claim 1 in the particular recitation of the amount of fructose, glucose and sucrose in the uncooked processed food.

Amrein teaches that potatoes have, on average have 684 mg of glucose and 435 mg of fructose and 996 mg of sucrose per kilogram of potatoes (See table 1). Each of these is less than 0.1%. and to therefore employ particular conventional potatoes which have the claimed range of glucose, fructose and sucrose would have been an obvious matter of choice and/or design depending on the amount of browning desired as well as the type of flavor imparted to the food product.

Response to Arguments

12. On page 2 paragraph 0003 of the declaration, declarant asserts that "the office action incorrectly concludes that the reduction of acrylamide is solely and directly tied to the reduction in browning." Declarant discusses the examples from the specification and urges that the products that were fermented that had a reducing sugar level of <0.1% "(where no browning is observed) had more acrylamide formed when cooked.

This argument has been considered but is not deemed persuasive. It is noted that tables 8 and 9 do not completely exclude that reducing sugars were not present. The tables only indicate that less than 0.1%. Also, the example never discusses whether browning does or does not occur.

13. Declarant further urges that "the absence of browning does not imply an absence of acrylamide formation." It is noted however, that Hilton et al. do not completely remove the browning but rather reduce the browning. Nevertheless, since the browning is correlated to the Maillard reaction, which reacts reducing sugars with amino acids and since it was known in the art that the Maillard reaction between reducing sugars and asparagine, an amino acid, results in the formation of acrylamide, it would have been obvious to one having ordinary skill in the art, that since Hilton et al. uses a fermentation to lower the reducing sugar content of the potato, that this would also have resulted in a reduction of the end product of the Maillard reaction (i.e. acrylamide) when the potatoes were thermally processed by frying for instance. It is noted that page 11, paragraph 0026 of declarant's specification also states that "the sugars available were reduced by fermentation as was the acrylamide factor upon frying of the potato slices." It is noted

that even the claims recite "a microorganism used for food fermentations for metabolizing sugars." Thus, it appears that applicant's process of using fermentation to lower the availability of reducing sugars is similar to the fermentation of Hilton et al., who also lower the availability of reducing sugars and thus would have reduced the formation of acrylamide when cooking the food product.

14. On page 3, paragraph 0005-0007, declarant urges that "the yeast extract provided a nutrient source to allow the microorganisms to reduce other acrylamide precursors" and not just reducing sugars.

This urging has been considered but is not deemed persuasive. As discussed above, example 1, page 11 paragraph 0026 of declarant's specification clearly states that the availability of the reducing sugars was lowered "by the fermentation" as was the acrylamide factor. Nowhere in the specification is it noted that the yeast extract was used as a nutrient source to allow the microorganism to reduce other acrylamide precursors. It is noted however, that examples 1 and 4-6 in the specification use the terminology "mono- and di-saccharides and others." Nevertheless, this does not conclusively disclose that the yeast extract was used so that the microorganisms can reduce other acrylamide precursors. Furthermore, it is noted that the yeast extract appears to be employed for stimulating growth of the microorganism (see page 1, paragraph 0002 of declarant's specification).

15. Further on paragraph 0006 of the declaration, declarant urges that "Hilton's potatoes naturally contain a reducing sugar nutrient source, and there would have been no reason to add a redundant nutrient source.

This argument is not persuasive. It is noted that the Catalogue of Bacteria & Bacteriophages teaches media formulations, which have been recommended by the ATCC for use in propagating strains of bacteria. Therefore, the media formulations cited on page 415 and 452 of this reference are clearly used for propagating bacteria strains. Furthermore, Champagnat teaches that a media that comprises yeast extract was used for incubating a yeast strain. Therefore the art taken as a whole teaches that the yeast extract has been a conventional component and nutrient source in the incubation, propagation and thus growth of the microorganism. Furthermore, it is noted that even the declarant's specification, on page 1, paragraph 0002, appears to indicate that yeast extract has been a growth stimulant for the microorganism. The specification also indicates that an aqueous medium was first prepared that included the microorganism and the nutrients, such as yeast extract; the combination to which was added a food product to initiate fermentation of the food product. Since the art teaches that yeast extract was a conventional nutrient used for incubating and thus growing yeast, to employ yeast extract into the aqueous medium comprising yeast, would therefore have been obvious for its art recognized and applicant's intended function.

16. Declarant further asserts on paragraph 0007 on page 3, that whenever the references used dry yeast extract it was used in combination with other growth

promoting ingredients, Thus not teaching or suggesting the use of dry yeast extract without an additional nutrient source such as a sugar.

This argument has been considered but is not deemed persuasive. The references to "yeast growth medium" and Champagnat have only been relied on to provide further evidence that yeast extract has been a conventional nutrient to be employed for growing microorganisms. Even further, page 415, medium 17 of the Catalogue of Bacteria & Bacteriophages teaches a formulation that does not comprise added sugar. In addition, Lund teaches on page 1765 that "yeast extract...gave superior growth characteristics ..., reflecting the original growth media used in the product of these yeasts." Therefore, the art taken as a whole clearly teaches the use of yeast extract to simulate the growth of microorganisms and also teaches the use of yeast extract as a stand alone growth medium. Furthermore, it is noted that even if sugars were included at this point in the aqueous medium, the purpose of the yeast extract and the sugars in the media formulation was for the purpose of stimulating growth of the microorganisms. Therefore, these additional sugars would nonetheless have been expected to have been consumed since the purpose of the media formulation was to propagate the growth of the microorganism. Even further still, it is noted that since the potatoes of Hilton et al., for instance already comprise sugars, there would be no need to include added sugar, for the purpose of increasing the growth of the microorganism, which in turn would increase the rate of fermentation. Therefore declarant's arguments have been considered but are not deemed persuasive.

17. On page 4 paragraph 0008, declarant urges that "using an acid to adjust the pH of a fermentation medium to a range that is below the optimal and even inhibitory pH range for the growth of the fermenting microorganisms can reduce the formation of acrylamide in the fermented food products regardless of the reducing of mono- and di-saccharides."

This argument has been considered but is not persuasive. It is not clear as to how potentially slowing the rate of growth of the microorganisms and thus slowing down or inhibiting fermentation by lowering the pH to non-optimal conditions results in the reduction in the formation of acrylamide, especially in light of tables 6 and 7 in the specification which indicated that longer incubation times increased acrylamide reduction. Furthermore, it is noted that the prior art teaches microorganisms and media that can optimally grow at various pH ranges, within the claimed range. For instance, "How to Restart a Stuck Fermentation" teaches that the ideal condition for yeast fermentation is between 3.5 to 5.5 and "Yeast Fermentation" teaches that it has been conventional to control the pH of the fermentation to 5, for optimal growth. Furthermore, even though dependent claims recite wherein the microorganism is yeast and wherein the microorganism is lactic acid bacteria, these dependent claims still read on a broad range of microorganism, each of which can have varying growth conditions with respect to pH and temperature, to name a few. The art relied on clearly teaches pH values that are within the claimed pH ranges of 4 to 8 and 4 to 5 result in optimal conditions of the growth of particular microorganisms for fermentations. Therefore without a specific recitation of the particular microorganism and what the optimal versus the "non-optimal"

growth conditions would have been there would have been an undue amount of experimentation to determine which microorganism have "non-optima' growth conditions under the claimed pH ranges. In any case, the declarant's urging that the pH is outside the optimal growth conditions for the microorganism is further not persuasive, since this argument is not commensurate in scope with the claims. If this property is critical to the claimed process, it is noted that it has not been recited in the claims.

18. On page 4, paragraph 0009 of the declaration, declarant urges that "reduction of acrylamide" is different from "reduction of saccharides" and urges that while the Maillard reaction plays a role it is not the only factor involved. Nevertheless, as discussed above, page 11, paragraph 0026 of declarant's specification discloses that the acrylamide was reduced as a result of the fermentation, which thus lowered the availability of reducing sugars. Hilton et al. appears to perform a similar fermentation.

19. On page 5, paragraph 0010 of the declaration, declarant urges that references were misinterpreted regarding the fermentation pH values. Declarant asserts that Bechtle's starting pH of the native pH of acid whey, which is well known to be between 5.1-5.6 and Bechtle did not adjust the pH of the native acid whey prior to the fermentation, he used it as is. Declarant further urges that Bechtle teaches that a pH of 4.4-4.9 is inhibitory to the growth of lactic acid bacteria.

These arguments have been considered but are not deemed persuasive. It is noted that on column 7, line 42, of Bechtle the pH of the substrate "at the start of the

fermentation" can be between 4.9 and 5.9. The claim recites that the pH is between "about 4 and 5." Nevertheless, if the pH at the start of the fermentation was between 4.9 to 5.9, then the pH of the medium would also have been within this range especially since the pH then drops to "inhibitory levels" where the growth of the bacteria is inhibited and then rises again as a result of the yeast present. Nevertheless, it is noted that since Bechtle teaches a range of pH values at the start of the fermentation and further since Bechtle teaches a variety of microorganisms and combinations of microorganism for carrying out the fermentation, it is noted that the particular pH would have been routinely determinable by experimentation for the purpose achieving the desired fermentation rate. It is noted that Bechtle further provides a generic teaching that bacteria such as lactic acid bacteria have been known in the art to conduct fermentation within applicant's range of "between about 4 and 5." Furthermore, Hagiwara provides additional evidence that lactic acid fermentation "at the start of fermentation" can be between "about 4 to about 6." (Column 4, lines 53-60).

20. On page 5 paragraph 0011 of the declaration, declarant urges that pH values that are not requisite with optimal fermentation resulted in the highest acrylamide reduction, as opposed to the references which use pH values that result in optimal fermentation.

This argument has been considered but is not deemed persuasive, for the reasons given above with respect to declarant's urgings on paragraph 0008 of the declaration.

21. On page 5, paragraph 0012 of the declaration, declarant urges that the lower pH cannot be obtained from lactic acid bacteria alone, but rather requires yeast extract, which comprises starch, fiber and sugars and therefore there was no need to adjust the fermentation to its original value that was set before the onset of the fermentation.

This argument is not clear with respect to what portions of the references applied or the office action declarant is referring to. Furthermore, it is noted that the use of yeast extract has been taught to have been a conventional nutrient for the growth of both yeasts and lactic acid bacteria, as evidenced by the mediums taught by The Catalogue of Bacteria & Bacteriophages. The urgings of the declarant, in this paragraph, further appear to disclose that by addition of yeast extract, which also comprises sugars, that the process also adds sugar to the fermentation. It is noted, however, that the claims recite when no sugars are added to the processed food. Furthermore, regarding the particular amount of reducing sugars contained in the potato slices, it appears that declarant is indicating that the industry standard for potato slices has conventionally been potatoes with these ranges of reducing sugars.

22. On page 0013 of the declaration, declarant urges that because Hilton is using blanched mashed potatoes, that the post fermentation blanched mashed potatoes cannot be washed to remove the fermenting yeast, because mashed potatoes are not washable and motivation to do so is not suggested by Hilton. This urging has been considered but is not deemed persuasive. It is noted that declarant has not provided

any substantiation of this urging. Since Hilton et al. teaches that the mashed potatoes are then dried into flakes, it is noted that a "plug" like mass would less likely have been capable of being converted into flakes by simply drying. Furthermore, it is noted that if water cannot pass through the mashed potatoes, then it would not be clear as to how the fermentation medium would have acted on the entire product in the vessel. If this was true, then portions of the product would have been less fermented than other portions of the product.

23. On page 13 of the response, applicant urges that the Hilton et al. reference does not teach a fluid aqueous medium or one that is fluid or otherwise capable of flowing. Applicant uses the example I on column 7 of the Hilton reference to calculate the amount of water available as a result of the addition of an aqueous fermentation medium to potatoes. It is noted that applicant's arguments that the addition of the amount of the aqueous slurry taught by Hilton et al. would not have resulted in a fluid aqueous medium have been considered but are not deemed persuasive. It is noted that the claim recites that the fermenter contains a "fluid aqueous medium" which also comprises yeast extract a microorganism and at least one of a food-grade acid or alkali hydroxide. As discussed above, Hilton et al. disclose a fluid aqueous medium as well, which is then added to potatoes. The fermentation of Hilton et al. still occurs in an aqueous medium.

In addition, it is noted that applicant's arguments are not commensurate in scope with the claims. Step (b) in claim1, for instance recites, "fermenting the uncooked

processed food in the aqueous medium which is agitated in the fermenter with the microorganism...." This limitation does not recite that the aqueous medium is completely fluid during fermentation but rather that the food and a fluid aqueous medium are combined for fermentation. Applicant is cautioned against the addition of new matter.

24. Applicant's urging on page 14 regarding the use of the yeast extract is not persuasive for the reasons discussed above with respect to paragraph 0006 of the declaration. Applicant additionally urges, however, that the reliance on isolated disclosures of yeast extract and discounting of the chemical constituents of Hilton's base fermentation system represents impermissible hindsight reconstruction of the claimed process.

It must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In any case, it is noted that the references that have been relied on to teach the use of yeast, extract and clearly teach that yeast extracts have been a conventional medium for incubating microorganisms used in fermentations. It is noted that applicant also discloses this as the purpose of nutrients such as yeast extract and paragraph 0012 of the declaration discusses that the yeast

extract contains various other components such as starch, fiber and sugars, which are all nutrients for propagating the growth of the microorganism used for fermentation.

25. Applicant's urgings regarding the acrylamide reduction, as discussed on page 15 of applicant's response has been considered but is not persuasive for the reasons given above with respect to paragraph 0003 of the declaration.

26. On page 16 of applicant's response, Applicant urges that it would not have been possible to wash the fermented food product of Hilton, because Hilton uses blanched mashed potatoes because there is no expectation that such a washing step would be effective or even possible. This argument has been considered but is not deemed persuasive. It is noted that applicant has not provided any evidence to support the urging. Also, it is noted, as discussed above with respect to paragraph 0013 of the declaration, that since Hilton et al. dries the fermented potatoes into flakes, that this teaches that the product would have been capable of being washed, since a slab or plug of potato dough would not necessarily have been capable of being dried into flakes without some other step of reducing the size of the slab of dough.

27. Further on page 16 to page 17 of the response, Applicant urges that the reference to Christ recycles the liquid and the microorganisms within the same batch and not between successive batches as recited and therefore does not teach the claimed limitation. Applicant further urges that Christ's recycling simply prevents

dehydration of the material being fermented, so there is no reason to modify the applied combination of references to arrive at the recited feature.

This argument has been considered but is not deemed persuasive. It is noted that Christ has been only been relied on to teach that it was conventional in the art to recycle the fermentation medium. Although Christ teaches that the result of the recycling is to rehydrate the top of the batch of sauerkraut, it is noted that since the fermentation liquid flows, by gravity, to the bottom of the vessel, that recirculating the fermentation liquid clearly rehydrates and thus further ensures that the top portion of the cabbage, to be fermented, is also continuously in contact with the fermentation liquid. In any case, Hopkins, Young et al. and Pinnegar have been relied on to teach the advantages of recirculating an aqueous fermentation medium and the use of filters within a fermentation vessel for the purpose of separating components from each other.

28. On page 18 of the response, Applicant urges that tables 8 and 9 of the specification disclose that pH values of 4 and 5 are substantially higher than the pH values from 6 to 8 and the benefit of using a lower pH using yeast and bacterial cells resulted in substantial acrylamide reduction compared to optimal pH for microbial growth of microorganisms at higher pH values such as 6 to 7. It is noted that these urgings have been considered but are not deemed persuasive for the reasons given above with respect to paragraphs 0008 and 0011 of the declaration. It is further noted that table 8 appears to indicate that at pH of 8, acrylamide was reduced more than at a pH of 7 and 6. Therefore, the conclusion that a lowered pH results in improved

acrylamide reduction is not convincing. In addition, however, it is noted that the third trail of table 6 and table 8 have employed the same microorganism in the same amount for the same amount of time but result in different percent reduction in acrylamide. The inconsistency in the data further makes applicant's urging unconvincing.

29. Applicant further urges that the particular value of the pH, between 4 and 5, would not have been a matter of routine optimization since the applied references fail to even indicate the desirability of "limiting" acrylamide formation. Applicant urges that the references also fail to suggest that the pH is a result-effective variable for acrylamide reduction.

These arguments have been considered but are not deemed persuasive. It is noted that the references relied on teach that different microorganisms require different pH conditions for fermentation. For instance Hagiwara teaches fermentations using lactic acid bacteria that start at a pH between about 4 and about 6. Furthermore, "Yeast Fermentation" and "How to Restart a Stuck Fermentation" also teach that a yeast fermentation can be restarted using a pH between 3.5 to 5.5. To therefore employ a particular pH, such as between 4 and 5 would have been an obvious optimization routinely determinable by experimentation since the art taken as a whole teaches that the desired pH would have varied based on the particular microorganism employed and the optimal conditions for growth and thus fermentation.

30. Applicant's urging on page 19 of the response, that "How to Restart a Stuck Fermentation" is not available as prior art has been considered but is not persuasive. The reference has been provided where the publication date is October 23, 2001. The reference to Microbiology & Bacteriology has been withdrawn since it is not clear as to what information was provided during the copyright periods of 1999 to 2007.

31. THose rejections under 35 U.S.C. 112, second paragraph that were addressed by amendment to the claims have been withdrawn.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VIREN THAKUR whose telephone number is (571)272-6694. The examiner can normally be reached on Monday through Friday from 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571)-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Steve Weinstein/
Primary Examiner, Art Unit 1794

/V. T./
Examiner, Art Unit 1794